

WHAT IS CLAIMED IS:

- 1 1. A method comprising the steps of:
 2 receiving a first data stream, wherein the first data stream includes digital video data;
 3 parsing the first data stream using a first data processor to identify a first channel,
 4 wherein the first channel is a channel of compressed digital video having a
 5 characteristic represented by a first value;
 6 receiving data associated with the first channel at a transcoder, wherein the transcoder is
 7 dedicated to transcoding video; and
 8 generating a representation of the first channel, using the transcoder, wherein the
 9 representation of the first channel is a channel of compressed digital video having
 10 the characteristic represented by a second value.
- 11 2. The method of claim 1, wherein the step of parsing includes using the first data
 12 processor, where the first data processor is a general purpose processor, and the step of
 13 receiving data associated with the first channel includes the transcoder being a separate
 14 component from the first data processor.
- 15 3. The method of claim 1, wherein the step of generating further includes the steps of:
 16 decompressing the first channel to generate a first intermediate data;
 17 scaling the first channel to generate a second intermediate data; and
 18 compressing the first channel to generate the representation of the first channel.

1 4. The method of claim 1, wherein the step of generating further includes the steps of:
 2 decompressing the first channel to generate a first intermediate data; wherein the first
 3 intermediate data is frequency domain data;
 4 converting the first intermediate data to a second intermediate data, wherein the second
 5 intermediate data is time domain data having the characteristic represented by the
 6 first value;
 7 converting the second intermediate data to a third intermediate data having the
 8 characteristic represented by the second value; and
 9 compressing the first channel to generate the representation of the first channel.

1 5. The method of claim 1 wherein the characteristic is a scale factor.

1 6. The method of claim 1, wherein:
 2 the step of receiving includes receiving the first data stream at a first memory;
 3 the step of parsing includes storing the first channel at the first memory; and
 4 the step of receiving data associated with the first channel includes accessing the data
 5 associated with the first channel from the first memory.

1 7. The method of claim 1 further including the step of performing error correction and error
 2 handling at the first data processor.

1 8. The method of claim 1, wherein the steps of receiving the first data stream, parsing,
 2 receiving data at the transcoder, and generating support a real-time play back of the
 3 representation of the first channel.

1 9. The method of claim 1, wherein the step of receiving data includes receiving data at a
 2 transcoder, wherein the transcoder and the first data processor are integrated onto a
 3 common substrate.

1 10. The method of claim 9, wherein the common substrate includes a semiconductor
2 substrate.

1 11. The method of claim 1 wherein the characteristic is a scale factor.

1 12. The method of claim 1 wherein the characteristic is a compression factor.

- 1 13. An integrated single chip system comprising:
2 a first processor to receive digital video data and provide parsed video data;
3 a second processor coupled to the first processor to access the parsed video data, the
4 second processor including a video transcoder.
- 1 14. The system of claim 13, wherein the first processor is a general purpose processor.
- 1 15. The system of claim 14, wherein the second processor further includes:
2 a data decompression portion;
3 a scalar; and
4 a data compression portion.
- 1 16. The system of claim 15, wherein the decompression portion includes a portion to perform
a frequency domain to a time domain transform.
- 1 17. The system of claim 16, wherein the frequency domain to time domain transform portion
is a portion to performs an inverse discrete cosine transform portion.
- 1 18. The system of claim 16, wherein the decompression portion includes a portion to perform
a de-quantization of data.
- 1 19. The system of claim 16, wherein the decompression portion includes a portion to perform
2 a DeZigZag of data.
- 1 20. The system of claim 19, wherein the decompression portion includes a motion
2 compensation portion.

- 1 21. The system of claim 16, wherein the decompression portion includes a motion
2 compensation portion.
- 1 22. The system of claim 15, wherein the decompression portion includes a motion
2 compensation portion.
- 1 23. The system of claim 22, wherein the compression portion includes a motion vector
2 generator.
- 1 24. The system of claim 23, wherein the motion vector generator includes a buffered motion
2 predictor.
- 1 25. The system of claim 24, wherein the compression portion further includes a portion to
2 perform a time domain to a frequency domain transform.
- 1 26. The system of claim 25, wherein the time domain to frequency domain transform portion
2 includes a discrete cosine transform portion.
- 1 27. The system of claim 15, wherein the compression portion includes a motion vector
2 generator.
- 1 28. The system of claim 25, wherein the motion vector generator includes a buffered motion
2 predictor.
- 1 29. The system of claim 13, wherein the second processor is coupled to the first processor
2 through a memory controller and a sequencer.